

## Office Action Summary

Applicati n No.

10/045,236

Applicant(s)

PAVLIK, ROBERT S.

Examiner

Ngoc-Yen M. Nguyen

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 9-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-14 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other:



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,236	10/23/2001	Robert S. Pavlik JR.	SP01-168	9896
22928	7590	10/09/2003	EXAMINER	
CORNING INCORPORATED			NGUYEN, NGOC YEN M	
SP-TI-3-1				
CORNING, NY 14831			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 10/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

### DETAILED ACTION

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-8 are, drawn to a method of producing fused oxide body, classified in class 423, subclass 336+.
- II. Claims 9-14 are, drawn to an apparatus for producing fused oxide body, classified in class 422, subclass 129+.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus as claimed can be used to practice another and materially different process such as a process for producing metal carbide.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Schaeberle on September 29, 2003 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-8. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9-14 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for zircon as the refractory material, does not reasonably provide enablement for other refractory material such as silica. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. Applicant has not provided any disclosure to any other refractory material other than zircon. As stated in the instant specification, the impurities to be removed from the refractory material are aluminum, silicon (note Table I on page 9), thus, when silica or alumina is used as the refractory material, would all silicon or aluminum from the silica and alumina be removed?

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sempolinski et al (5,395,413) in view of Arendt (4,361,542).

Sempolinski '413 discloses a method of producing a fused silica product comprising introducing a silicon-containing, organometallic compound into a flame to form molten silica particles, and collecting the molten silica particles in a furnace, the improvement comprising constructing at least the furnace crown from a porous, fired, zircon refractory having a sodium ion content of less than 30 ppm such that said fused silica product has a sodium ion contamination level below 100 parts per billion (note claim 1).

In Sempolinski '413, there is a question as to why the zircon refractories should contribute such greater sodium contamination with the new feedstock (i.e. polymethylsiloxane) and it was surmised that sodium ions have always been introduced from the zircon refractories. However, HCl is generated as a byproduct when  $\text{SiCl}_4$  was used as feedstock. It appears that the HCl evolved acts as an excellent agent for cleaning the furnace refractories of metal contaminants. The purpose of switching to a polymethylsiloxane was to avoid evolution and emission of HCl. Consequently, it now becomes necessary to use cleaner refractories materials, in particular, zircon refractory bodies with minimal ion content (note column 4, lines 5-17). Thus, Sempolinski '413 fairly suggests that it is desirable to remove metal contaminants from the zircon refractory material and since HCl is no longer formed during the process of producing fused metal oxide, it would have been obvious to one of ordinary skill in the art to treat such zircon refractory material with HCl prior to the process in order to remove the metal impurities.

The difference is Sempolinski '413 does not specifically disclose the use of a strong acid in liquid form to remove the contaminants from zircon.

Arendt '542 discloses a process for retrieving  $\text{ZrSiO}_4$  from zircon sand, said zircon sand being comprised of  $\text{ZrSiO}_4$  and a significant amount of impurities including  $\text{SiO}_2$  and iron, which comprises mixing an aqueous slurry of said zircon sand with nitric acid and hydrochloric acid to oxidize its iron component to ferric ion and reacting said ferric ion with said hydrochloric acid producing ferric chloride in solution; admixing the resulting agglomerated mass with concentrated hydrofluoric acid to dissolve its silica content, washing the resulting  $\text{ZrSiO}_4$  product which contains so significant amount of impurities.

Even though Arendt '542 discloses zircon as small particles, however, the process of Arendt '542 could be applied for the zircon refractory bodies of Sempolinski '413 because Sempolinski '413 only desires the removal of the contaminants from the surface of such bodies, where there is contact between the bodies and the reactants and/or product.

It would have been obvious to one of ordinary skill in the art to use a strong acid in liquid form, as suggested by Arendt '542 to remove metal contaminants from the zircon refractory bodies of Sempolinski '413 because Sempolinski '413 teaches that such removal is desirable.

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sempolinski '413 in view of Arendt '542 as applied to claim 1-6 above, and further in view of the admitted prior art on page 4 of the instant specification.

The difference not yet discussed is Sempolinski '413 does not disclose a carbochlorination treatment.

The admitted prior art on page 4 teaches that it is known and conventional in the art to further remove metals contaminants from the zircon refractory body to a ppm level by "carbochlorination" method (note page 4 of the instant specification, lines 8-27).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to further apply the "carbochlorination" method to further purify the zircon in the process of Sempolinski '413 because such process is well known and conventional in the art and because Sempolinski '413 desires a purer zircon material in order to avoid cross contamination in the process of forming fused oxide material.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (703) 308-2536. The examiner can normally be reached on Part time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (703) 308-3837. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Ngoc-Yen M. Nguyen  
Primary Examiner  
Art Unit 1754

nmn  
October 1, 2003